

Title (en)  
Photosensitive resin composition, color filter, and copolymer resin useful for them

Title (de)  
Lichtempfindliche Zusammensetzung, Farbfilter und dafür geeignetes Copolymerharz

Title (fr)  
Composition photosensible, filtre coloré et résine copolymère destinée à ceux-ci

Publication  
**EP 1035439 A2 20000913 (EN)**

Application  
**EP 00103385 A 20000224**

Priority  
• JP 4917799 A 19990225  
• JP 4917899 A 19990225

Abstract (en)  
There is provided an epoxy-containing copolymer resin comprising 0 to 55% by mole of constituent units represented by formula (1), 5 to 95% by mole of constituent units represented by formula (2), and 5 to 95% by mole of constituent units represented by formula (3), the constituent units represented by formula (1) having been partially reacted, through carboxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the constituent units represented by formula (2) having been partially reacted, through hydroxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the copolymer resin containing 5 to 95% by mole of (meth)acryloyl groups and having an acid value of 0 to 400 mg KOH/g and a weight average molecular weight of 5,000 to 1,000,000 as determined using polystyrene as a standard: <CHEM> <CHEM> wherein R represents hydrogen or an alkyl group having 1 to 5 carbon atoms; R1 represents an alkylene group having 2 to 4 carbon atoms; R2 represents an alkylene group having 1 to 4 carbon atoms; Z represents a 1,2-epoxy, 1,3-epoxy, or 1,4-epoxy group; and a, b, and c are integers respectively corresponding to said molar percentages. There is further provided a photosensitive resin composition comprising: the above epoxy-containing copolymer resin; an alkali-developable photocurable copolymer resin; a bifunctional or higher polyfunctional photopolymerizable acrylate monomer; and an initiator, the alkali-developable photocurable copolymer resin comprising 5 to 55% by mole of constituent units represented by formula (1) and 5 to 95% by mole of constituent units represented by formula (2), the constituent units represented by formula (1) having been partially reacted, through carboxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the constituent units represented by formula (2) having been partially reacted, through hydroxyl groups thereof, with a (meth)acryloylalkyl isocyanate compound, the copolymer resin containing 5 to 95% by mole of (meth)acryloyl groups and having an acid value of 5 to 400 mg KOH/g and a weight average molecular weight of 5,000 to 1,000,000 as determined using polystyrene as a standard. There is still further provided a color filter comprising: a transparent substrate; a colored layer provided on the transparent substrate; and a protective layer provided so as to cover the colored layer, the protective layer having been formed by coating the above photosensitive resin composition, exposing the coating, developing the exposed coating with an alkali, and heating the developed coating. <IMAGE>

IPC 1-7  
**G03F 7/032**

IPC 8 full level  
**C08F 220/62** (2006.01); **G03F 7/038** (2006.01)

CPC (source: EP KR US)  
**C08F 220/62** (2013.01 - KR); **G03F 7/0388** (2013.01 - EP US)

Cited by  
KR100830019B1; US6582862B1; US7790354B2; WO2005103822A3; WO0246840A1; TWI406093B

Designated contracting state (EPC)  
DE FR GB

DOCDB simple family (publication)  
**EP 1035439 A2 20000913; EP 1035439 A3 20020213; EP 1035439 B1 20050615**; DE 60020762 D1 20050721; DE 60020762 T2 20060504; KR 100354333 B1 20020928; KR 20000058201 A 20000925; TW I255944 B 20060601; US 2002172873 A1 20021121; US 6410206 B1 20020625; US 6517980 B2 20030211

DOCDB simple family (application)  
**EP 00103385 A 20000224**; DE 60020762 T 20000224; KR 20000009383 A 20000225; TW 89103422 A 20000225; US 11446602 A 20020403; US 51234700 A 20000224